

## ABSTRACT

A steel part according to the present invention is a part in which a surface of an austenitic stainless steel containing 3 to 20 mass % of Mn was carbonitrided to be hardened. By setting Vickers hardness of the surface to 1350 HV or more and setting a depth of a hardened layer having 1000 HV or more from the surface of the steel to 10  $\mu\text{m}$  or more, when the part according to the present invention is applied to a part required for sliding and wear resistance particularly, the service life can be improved significantly. Further, since the manufacturing method is performed by only heating in a gas atmosphere, a large number of parts can be simultaneously treated. Thus the stainless steel parts of the present invention can be adopted to wide fields as stainless steel parts required for wear resistance.